



# Lead and Copper in Drinking Water Fact Sheet

## Important Information on How to Protect Your Health

### **What Are The Health Effects of Lead?**

*Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.*

### **What Are The Sources of Lead?**

Lead is a common metal that occurs naturally and is used in many consumer products. It is known to be harmful to human health if ingested or inhaled. The primary sources of lead exposure for most children are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated residential soil. Exposure to lead is a significant health concern, especially for young children and infants whose growing bodies tend to absorb more lead than the average adult.

EPA estimates that 10 to 20 percent of human exposure to lead may come from lead in drinking water. Lead may enter the drinking water after the water has left the treatment plant and enters customer's faucets. Lead is rarely found in source water, but enters tap water through corrosion of materials containing lead or copper in lead service lines or household plumbing. These materials include brass faucets, lead solder on copper pipes, lead pipes, or lead service lines connecting the water main to the inside plumbing. Lead pipes are no longer installed for service lines or in household plumbing. The amount of lead allowed in brass faucets has also been limited by federal law, but can still contribute some lead to drinking water. Even with these restrictions in place, some homes, especially older homes may still have significant amounts of lead in their plumbing systems. Homes built before 1986 are more likely to have lead pipes, fixtures and solder. However, new homes are also at risk: even legally "lead-free" plumbing may contain up to 8 percent lead. The most common problem is with brass or chrome-plated brass faucets and fixtures which can leach significant amounts of lead into the water, especially hot water. Although your home's drinking water lead levels were below the action level, if you are concerned about lead exposure, parents should ask their health care providers about testing children for high levels of lead in the blood.

### **What Are the Health Effects of Copper?**

Copper is a reddish metal that occurs naturally in rock, soil, water, sediment, and air. It has many practical uses and is commonly found in coins, electrical wiring, and pipes. The primary sources of copper in drinking water are from corrosion of household plumbing systems, erosion of natural deposits, and leaching from wood preservatives.

### **What Are the Sources of Copper?**

Although copper is an essential element for living organisms, including humans, and in small amounts, is necessary in our diet to ensure good health, some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

### **What Can I Do To Reduce Exposure to Lead and Copper in Drinking Water?**

- ***Run your water to flush out lead.*** If water hasn't been used for several hours, run water for 15 to 30 seconds or until it becomes cold or reaches a steady temperature before using it for drinking or cooking. The amount of time it takes depends on your home and how its plumbing is arranged. If your home has a lead service line, you should flush water for an additional minute to ensure you are flushing lead and copper-containing water from the pipes and getting fresh water from the water main.

Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. Flushing usually uses less than one or two gallons of water and costs less than \$0.05 to \$0.09 per month.

Other household water uses will also help clear standing water from your home's plumbing. For example, you may want to establish a routine of showering, flushing the toilet, or running the dishwasher first thing in the morning before using the water to drink or cook with. However, keep in mind that individual faucets will still need to be flushed for a short time before using it for drinking water purposes.

To conserve water, EPA also suggests you use the flushed water for purposes other than for drinking, such as watering your plants or for cleaning purposes. It may also be helpful to collect the fresh drinking water in a container and store it for later use so you don't have to flush the water every time you need it. An added benefit to flushing the water is that the taste of your drinking water may improve because the stagnant water is replaced with fresh water from the water main. *For additional water conservation tips, call Tucson Water at 791-4331.*

- ***Use cold water for cooking and preparing baby formula.*** Hot water dissolves lead more quickly than cold water and is therefore more likely to contain greater amounts of lead. It is especially important not to use the water from the hot water tap to prepare baby formula.

- ***Do not boil water to remove lead.*** Boiling water will concentrate lead levels, which can increase the amount of lead in the water.
- ***Look for alternative sources or treatment of water.*** Some faucet and pitcher filters can remove lead from drinking water. If you use a filter, be sure to get one that is tested and certified by an independent third party per the standards developed by NSF International. Be sure to maintain and replace a filter device in accordance with the manufacturer's instructions to protect water quality.
- ***Test your water for lead.*** If you are concerned about lead in your drinking water, EPA recommends testing your water by a certified laboratory. For assistance in locating a certified commercial laboratory, contact the Arizona Department of Health Services Web at 602.364.0720 or visit the Web site at [www.azdhs.gov/lab/license/env.htm](http://www.azdhs.gov/lab/license/env.htm). Commercial labs may charge from \$15 to \$25 to analyze one sample.
- ***Identify if your plumbing fixtures contain lead.*** New brass faucets, fittings, and valves, including those advertised as "lead-free", may contribute lead to drinking water. The law currently allows end-use brass fixtures, such as faucets, with up to 8% lead to be labeled as "lead free". Visit the National Sanitation Foundation Web site at [www.nsf.org/](http://www.nsf.org/) to learn more about lead-containing plumbing fixtures.

### **For More Information**

Call the Water Quality Division at 791-2544 or visit our website at [www.ci.tucson.az.us/water/](http://www.ci.tucson.az.us/water/). For more information on reducing lead exposure around your home and the health effects of lead, visit EPA's Web site at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead), call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

*If you are a non-English speaking resident, we recommend that you speak with someone who can help you translate the report. Para nuestros clientes de habla español: Éste informe contiene información muy importante sobre la calidad de su agua beber. Traduscalo o hable con alguien que lo entienda bien. Si tiene alguna pregunta, por favor llame a la División De la Gerencia De la Calidad Del Agua 791-2544.*